VIDEOGRAPHICS

RUNDGREN'S TOASTED AMIGA VIDEO

BY MICHAEL GROTTICELLI

3-D Toaster visions of a visionary.

Now that the initial excitement surrounding the NewTek Video Toaster has subsided, videographers have begun displaying projects completed with the new $1,595 effects package, and some are quite stunning. (NewTek marketing director Mark Randall reports that since the Toaster started shipping in October of last year, the company receives several videos each week, ranging from "amateur, first-time productions to experienced network professionals producing outstanding work out of their homes.") But of all the videos to come across Randall's desk, none has generated the kind of response, both from industry professionals and the press, as Warner Bros. recording artist Todd Rundgren's four-minute *Change Myself* music video—in support of the single from his latest album *2nd Wind*.

Against a constantly evolving series of computer-generated backgrounds (including water reflection and star-filled sequences), the highly graphic video juxtaposes a number of ordinary and extraordinary shapes (e.g. an orange, banana, and weather vane along with multiplying cells and separating spheres) with a succession of live-action clips of Rundgren singing, texture-mapped onto a series 3D surfaces. These live-action objects travel slowly across the screen, giving way to others. What is most interesting about the project is that although the video looks as if it were accomplished on a very large-scale budget, it was produced with the Toaster and its accompanying Lightwave 3D animation package, which allowed Rundgren to save time and drastically reduce production costs.

Rundgren first saw a sample of what the Toaster could do two years ago through a friend—who just happened to be one of the main hardware engineers at NewTek—and his interest was piqued. Then when he stopped by the NewTek booth at the Siggraph convention in Dallas last summer, he saw his engineer friend again.
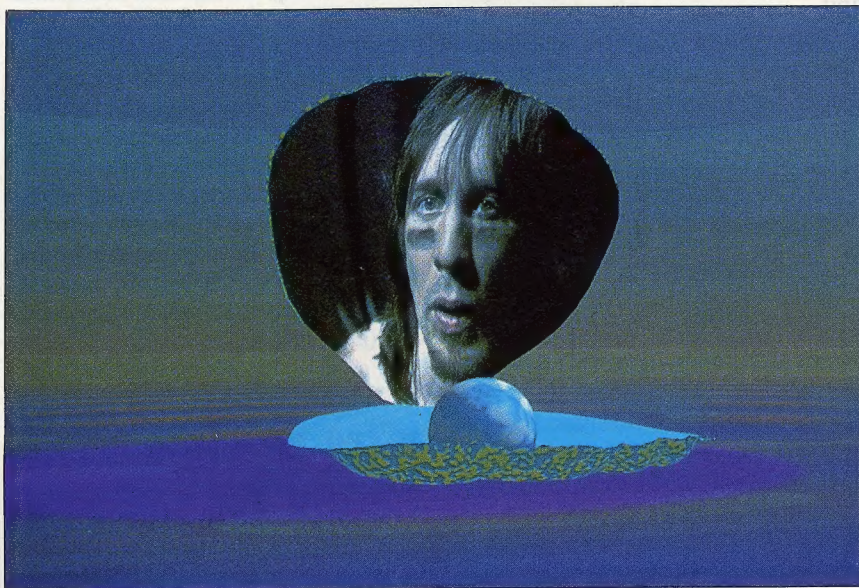
"I suddenly realized this was what he had been working on," Rundgren says. "I did a little arithmetic in my head and came to the conclusion that it was possible to do what I had wanted to do for a long time, which was a totally full-motion 3D rendered video on my desktop PC."

Rundgren came back the next day before the exhibit floor had officially opened and had the NewTek staff show him all the software before the booth got crowded. "I had a number of questions that I needed answered in order to determine whether it was possible to do this. So, I came in early the next day and after playing with it for a while I determined that, yes, it would be possible. I was impressed with the fact that it was a complete solution, encompassing both hardware and software."

Although Rundgren served as producer and director for the *Change Myself* project, and completed all the rendering and compositing work in six weeks, (the duration of the project from initial design stages—including R&D—

to finished product was more like five months) he had special help from NewTek, which provided technical and programming expertise. This included sending the engineer who wrote the renderer to make modifications in the software as was required in order to complete the project, and also sending ten Amiga 2500s with Video Toasters—essential to meet an extremely tight VH-1 deadline.

In making the video, the first step (after all the actual design work had been completed) was to digitize the music track (using DigiDesign software on a Macintosh) and create a "hit" list. From this list, he completed a working script and built the video, including shooting live-action S-VHS footage of himself lip-syncing the song in his home studio.

Once the scripting was done it was time to start rendering. All the S-VHS scenes were transferred to a Sony CRVdisc (component recording video) recorder—model LVR-5000A—and signal processor—model LVS-5000A—through a Hotronic composite TBC. Next,

every other frame of the video was digitized using the Video Toaster and an Arex program—which controlled the Toaster—and a DiaQuest controller connected to the CRV. According to Rundgren, the video was rendered at half speed because he had access to only one CRV. It took him five days (starting on Christmas) to digitize 3,600 frames of video—filling up nine 335 MB hard drives.

Then the video had to be converted to RGB, renamed, and placed in the proper files, which actually took him less time than the digitizing because he had set up—with the help of NewTek—ten Video Toasters hooked up to ten Amiga 2500s (each with a 335 MB drive) and a 600 MB magneto optical drive for backup purposes. To each 2500 that he used, Rundgren also added an additional 2 MB of RAM for increased storage capacity.

After all of the digitized frames were converted to RGB files, the actual rendering began. This took the ten Toasters nearly four weeks to complete. Rundgren would give each Amiga/Toaster a scene and hook it up to a disk that contained all of the video data that it needed. The data coming off the hard disk would be rendered in anywhere from as little as 10 to 15 minutes to as much as 3 to 4 hours, depending on how complicated the frame was. Then the rendered frames were stored back onto the hard disk. In some instances, he had four or five Toasters simultaneously rendering one scene. This proved a complicated task as the machines weren't networked, so it had to be worked out manually on paper.

Finally, all the elements had to be transferred back onto the CRV, one frame at a time. From there Rundgren brought his completed work to Editel/San Francisco where the frames were transferred off the CRV and onto D-2 videotape for final online assembly and color-correction. In the end nearly 7,000 frames of animation were composited to complete the video.

Although many people seem to be holding up the *Change Myself* video to Toaster skeptics as an example of what can be done, Rundgren is quick to point out that one important factor in the video's success (that many tend to overlook) is his extensive experience in videographics and with computers.

"I have a copious knowledge of the techniques involved, which most people

don't," he said. "Even before having to learn the particular package that I used, I owned and ran a video studio for a long time and I've programmed computers, so I'm not a novice at this. Also, being a music personality and somewhat of a computer personality, it allows me to be well connected to all the resources necessary to do this. Most people don't have that."

The video is now running on the VH-1 network and by all accounts, the reviews have been rousing. For Rundgren, his point in creating the video by himself has been made. "I've had this long-time interest in desktop video," he explains, "about whether it was possible to actually make your own video at home—so to speak. And so in theory, I think I've shown that it's now possible. Of course I did it with ten computers, but I did it non-networked and manually duplicated what could have been done on one machine ten times. So, it would have taken somebody 40 weeks to render with one Toaster instead of four weeks to do it. I was up against a tight deadline so I had no choice.

"What's exciting about the Toaster to me is that it brings it within the realm of possibility for someone like a college art student to make this their thesis," Rundgren continues. "They simply get themselves an Amiga and a Toaster, learn how to use it, and realize their vision in this new art form. They don't have to have a lot of money and they don't have to call in a whole lot of outside help

"Now, there still are some things missing out of the equation, which I believe NewTek is going to solve in the long run, and that is the other video equipment that I had to use and the fact that I had to go into postproduction and had to find alternative ways of digitizing the sound," he adds.

As a result of the success that Rundgren has had with the Toaster, he recently announced—at a gathering of SIGGRAPH members at the Jet Propulsion Lab in Pasadena CA—a joint venture with NewTek to set up a videographics production company that will produce graphics on the Toaster for commercials, corporate projects, and music videos.

"One of our objectives is that we want to make this process even more workable than it is," Rundgren said. "In other

words take the basic idea, get the networking problems straightened out, and get the missing parts of the equation that I had to go outside for (in terms of hardware and software) under control. Then essentially we hope to make productions for their own sake, and not necessarily for the promotion of NewTek. Basically, we want to become the Pixar production arm of NewTek, and establish an artistic agenda for this art form."

According to NewTek's Randall, Rundgren will act as creative director for the new venture, and a number of "big names" from the computer graphics world will be brought on staff. "We'll serve on the technical side and Todd will head up the creative," he said. The new computer graphics company—which Randall says will be operational within a few months—will be based in Northern California.

"The Toaster changes the economics involved with starting up a new graphics business," Randall states. "We want to do this because it makes a lot of sense. We've seen a number of big name graphics firms that have recently gone out of business because of the high cost of the equipment. They have to buy or lease these huge mainframe computers, and then find the business to pay for them. We can afford to bring in some real top-notch people and render, but we're not under the economic time-bomb that most of these companies are under. Also, we'll have the world's best beta test team for all the new products that we're developing, and they'll be able to give us direction on R&D."

Alluding to the war in the Gulf in his address to the L.A. SIGGRAPH chapter, Rundgren said: "I will be the Norman Schwarzkopf and NewTek will be the Pentagon, providing us with the weapons to rain down terror on the computer graphics community. Since I know intimately the process at this point—and I've been in the trenches for a long time—I have the experience necessary to set the agenda for legitimatizing the whole idea of desktop video production. The object here is that making video is no longer going to require you to go to a specialist to do it. It's going to find its way into schools and homes (if it hasn't already), and become much more ubiquitous than it is." NewTek is located at 215 SE 8th Street, Topeka KS 66603, (913) 354-1146. ☐